

An Electronic Information Item Selection for Trade and  
Traded Item Control Delivery System

## FIELD OF THE INVENTION

The field of this invention relates to an electronic information item selection for trade and the traded item control delivery system, more particularly, it relates to a system that select, map, group, package, label and price media/television information items by time and content; a system of classifying, indexing, listing, searching and purchasing; as well as a control system for subscriber's secret key issuance, submission and authorization management, encryption for transmission, decryption for delivery and display.

## BACKGROUND OF THE INVENTION

US Patent 6028599 and 6341195 described an electronic program guide and its data base system; US Patent 6088722 described a personalized TV program selection system. Although these patents relate to electronic program guide and program selection systems, the purpose of those system are all for watching pre-selected and recorded program at later time, while never touch the subject of pre-select program for-not-use at specified time frame, but for preparing them into new time-tagged information items combination (hereafter refers to as dealpack) to send out for trade; US Patent 6058417 described a subscriber to subscriber electronic trading system on the internet, US Patent 6226675 described a corporate group to corporate group electronic online trading system. These systems are all set up for conventional physical goods trading, there is not yet a real or delayed or relayed time trading system for dealpacks' trade, such as TV programs, etc., media and information products.

Currently, electronic information (such as TV programs) items are provided by information content providers to information content network operators, who assemble the information content by channels and sell to subscribers on a monthly subscription basis. A content provider can sell its own content to many electronic information content network operators; an information content network operator can have its own mass subscriber base in a region, but content providers in most cases do not have real time supply relationship with operators' subscribers; network operator due to limitation of territory, only provide monthly service to its subscribers within its own network reached area; while subscribers pay the monthly

subscription fee, if the subscribed content (such as TV programs) is composed of several hundred channels, and in certain time frame (such as several days or certain day) the subscriber only use few contents (such as only watch several or tens of channels), the contents for the rest of the time (or rest of channels) are wasted. In other case, due to the internet technology development, if a content provider provide content directly to world wide subscribers via internet by the method of streaming SVOD (Subscription Video on Demand), though the quality is still in question, it breaks the area limitation of regional network's operation and some even bypass the network operation; similarly, a satellite direct broadcast network operator also is not restricted by terrestrial limitation. Both SVOD provider and direct satellite TV operator all encounter the limitation of various nations' government administration policy and media import and export control as well as content usage when their content deliver to these controlled area. Since one subscriber can only use one or several channels of media at time, while s/he owns the access right to the content operator's authorized media pool, which may contains hundreds or thousands of titles or channels of information or media; if the subscriber only use certain number of titles or channels of media in certain time, the rest of the title or media within or beyond the specified time shall be idle or wasted.

#### SUMMARY OF THE INVENTION

The objective of this invention is to provide a solution that will enable the electronic information content providers in the same area or different areas to trade its content in real or delayed or relayed time with content providers in other areas via their corresponding electronic information content network operators of their respective areas or directly through a trading network exchange center and deliver the content in a secured way. In order to realize the objective of the invention, this invention provide a system for electronic information item selection and trade as well as traded items, the dealpacks' control delivery. In one preferred embodiment of the invention, it includes a trading network center controlled device, such as client side TV set-top box and/or handheld PC/PDA or server side cable head-end, telecom node or computer hub, which download/upgrade electronic program item selection software mean, that can conduct electronic information items' selection by specified time frame and content, then map and group for-not-use items in accordance with pre-defined grid/ metrics, package, label, price them into dealpacks by pack-engine and list them out for real, delayed, relayed time trading and control delivery; and also comprises a network center controlled system for dealpack

indexing, listing, searching, trading, charging and billing as well as its encryption for transmission and decryption for delivery and display.

The above said software mean for electronic information item (such as TV programs) selection and packaging out for trading include an interactive electronic program selection guide. Such selection guide (could be an electronic program guide or EPG) could be interactively operated via a control device, such as set-top box and/or handheld device, that rolling display the listing/guide on TV/PC or via internet web pages directly or through internet channel. Subscribers select items via selection guide (such as EPG), the selected item could be time frame or time frame group, or item (such as program channel/title or channel/title combination), which are listed by pre-defined format, such as time along horizontal axis and items (such as channels/title or channels/titles combination) along vertical axis. When selecting items, subscriber can press keys pad (such as computer or phone), buttons on remote control unit, mouse or touch panel, or use touch pen to select some items as for-use, others as for-not-use (or for rent, for trade, for lease or for sale, etc.) in a specified time frame. Also subscribers can select to further display some label information (such as program briefing, author, publishing date etc.). Once those for-not-use items being determined, shall be immediately mapped into a pre-defined grid/metrics for regrouping and pricing by a dealpack pack-engine on the server side, they then will be put into trading status. This status shall be the authorization from the subscribers to the content operators to send those time-tagged for-not-use items' labeling data into regional trading database server, which is linked with the network center trading database exchange server and updated in real time to enable internal (among operator's own subscribers) or external (with subscribers of other network operators) trading.

The above mentioned network center online listing and content search /purchase trading system include regional log-on servers which are linked with the network center's servers. Those local servers can provide localized web interface for log-on by local operator and its subscribers, classified listing area on the internet or cable network for dealpacks, search, select and purchase area by key words, class and operators names for registered log-on local or related other regions' subscribers. The trading network center operator is in charge of the administration and operation of the trading database and servers, including register content operators and their subscribers' log-on authorization, online search system maintenance, trading settlement secret key issuance/release, and the management of the drop-in subscribers' control device (such as set-top box or network card) sales and their log-on authorization. Once the content network operator

registered its subscribers on to the trading network, can then link the time-tagged for-not-use trading dealpack database server to the trading network center's trading database exchange servers for listing out. Operator's subscribers and drop-in subscribers can then search the wanted dealpacks to purchase. For one preferred embodiment of the invention of TV program selection and purchasing, the search result could be list and price of the dealpacks, purchasing and supply method, etc.. If click certain dealpack, it can further display its labeling data, such as program titles, authors, directors, main actor/ess, briefing of the programs, publishing dates, pictures, previews and time for play, etc.. Once purchased, the center can use debt (settle account with operators by month), or use credit card/bank card as payment tool to close deal online. Once paid, purchaser shall be given a secret key, which could be administered by the trading network center on behalf of the purchaser to deliver the dealpack to the purchaser by scheduled time, or the secret key could be submitted by the purchaser him/herself via internet, cable or wirelessly to activate the dealpack delivery and display.

The secret key for the dealpack mentioned above is generated by a method of assembling the selling-subscriber's key, time frame identifier and identifier of the dealpack as well as verifier of payment for the dealpack.

The above mentioned secret key authentication, dealpack encryption transmission, gateway decryption, release for delivery and display system include the dealpack's encryption transmission, decryption for delivery and display control device and method. The said control devices is composed of set-top box type device, network card, network gateway and authorization card, dealpack pack-engine, the soft secret key, etc.; they operate together with the trading network's subscriber administration, network administration and billing system to provide the purchased dealpack encryption and decryption chain and delivery conduit to purchasers. The said method include steps of: download the EPG software mean; select for-use items and confirm the for-not-use items; send the for-not-use items to dealpack pack-engine for packaging, pricing and sending out to trading database server for listing; purchaser search and purchase the secret key for selected dealpacks; network administrator control and authenticate the secret key, encrypt and transmit the dealpack; same network subscribers trade with each other via network center to verify secret key and issue pass to let control device, such as set-top box/network card, release and deliver the dealpack, while different network subscribers trade each other via network center/gateway and set-top box together to verify secret key and issue pass to deliver the dealpack.

The objective and characteristics of the invention will become apparent from the following drawings and the detailed description.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is the overall flow chart of the information item selection and packaging into dealpack for listing on the trading network.

Figure 2 is the overall block diagram of dealpack trading and delivery system.

Figure 3 is the process block diagram of the dealpack search, selection, purchase and receiving by a subscriber.

Figure 4 is the block diagram of dealpack secret key assembling and generating method

#### DETAILED DESCRIPTION

A preferred embodiment of the present invention is disclosed in the flow chart/block diagram as illustrated in figure 1. Subscribers first select the program wanted to watch. It can start from classification index 100a, use hand held control unit to select the items interested 111, then select from the EPG 100 the wanted channels 110 and its code or name 130. If want to further understand the program, subscriber can select the program 131, then a window 132 will open and illustrate related information. Subscriber can further select time frame or time frame group 188 based on the selected channel combination 140, including to input/select the starting time and date 151 and ending time and date 152, then confirm with 160. Once confirmed, under the account number 171 of the subscriber, dealpack pack-engine 180PE will put all the rest of channels/programs 170 into pre-defined grid/matrices 180 to pricing 185 in accordance with channels 183 and time-tag 188 and show time 184 as well as dealpack ID 187, class code 189. With confirmation for trade 186, dealpacks 187 will automatically be sent to the regional trading network database server 190 linking network center trading exchange server 200 to list.

As illustrated by Figure 2, Figure 3 and Figure 4, subscriber shall select dealpack for watch. First, content operator A and B register and log-on to the trading network 300, the subscribers of this content operators shall then automatically registered on trading network 300. In the mean time, trading network operator will link the dealpack database server 190 to trading network center exchange server 200, and timely upgrade 301 with it. Network A operator 190a (or network B operator 190b, trading network operator 200) and their subscribers A1 (or B1, or

drop in subscribers 1) shall be connected into trading network server 240/200 via computer 241 (or 222, 201) or subscriber A2 (or B2, or drop in subscriber 2) via television 212 ( or 221, 202 ). Dealpack label data can be searched/listed 321 via key word, indexed by classification or name of the content operators, subscriber can accordingly search and purchase the dealpack 310, confirm with 320, close deal and settle account 321; payment 320 could be settled on a monthly basis via registered content operator's A or B's account; or if by credit card or bank card, settled by credit or cash 331. Once paid, trading network operator 200 shall issue/release 330 secret key 403 to subscriber 221, or to trading network operator 200 itself to administered the secret key 403 and activate timely 341 for subscriber 221. Once the secret key 403 submitted 351, the system shall verify and issue pass 360. The secret key 403 could be submitted 351 via wire, cable, internet or wirelessly. Secret key 403 is generated from selling-subscriber's key plus purchased dealpack identifier 187 and time-tag 188 as well as payment settlement verifier 330. For same network subscribers trading, the key 403 shall be verified by trading network center 200 and issue pass through set-top box/network card, while subscribers from different network trading, the key shall be verified by network gateway 231/232 and set-top box to issue pass 361.

It is to be understood that the above preferred embodiment of the invention is only illustrated the key concept and composition of this invention, many variations and modification can be made based on the accent of the above embodiment, which will be apparent to one skilled in the art, that are also within the spirit and scope of the invention as set forth in the claims below.